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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,696	02/13/2002	Nilesh Shah	20949P-000200US	1454

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EXAMINER	
BURGESS, BARBARA N	

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,696	SHAH ET AL.	
	Examiner	Art Unit	
	Barbara N Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7-29-02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-13, 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (hereinafter "Watan", US Patent No. 6,775,230 B1).

As per claim 1, Watan discloses a storage server in a storage area network connecting a plurality of host computers and a plurality of storage devices, said storage server comprising:

- A plurality of storage processors associated with said plurality of host computers and said plurality of storage devices, wherein said plurality of storage processors receives a plurality of command packets and a plurality of data packets (column 1, lines 24-28, 49-52, 61-67, column 2, lines 45-48, 58-65, column 3, lines 43-45, 52-54);
- A switching circuit connecting said plurality of storage processors (column 2, lines 23-27, 30-33, column 3, lines 42-53);
- A micro engine, wherein said micro engine is configured to execute processing

comprising:

configuring a path between a first storage processor and a second storage processor of said plurality of storage processors, via said switching circuit, in accordance with a command packet of said plurality of command packets (column 2, lines 23-27, 57-67, column 3, lines 32-35, column 4, lines 37-45);

routing a data packet of said plurality of data packets over said path, prior to completely receiving said data packet, between said first storage processor and said second storage processor via said switching circuit (column 5, lines 15-25, 29-50, 60-67, column 6, lines 1-10).

As per claim 2, Watan discloses the storage server of claim 1, wherein said first storage processor includes a lookup table that associates one or more virtual logical unit numbers (VLUNs) with one or more physical logical unit numbers (PLUNs), wherein said one or more PLUNs are associated with said plurality of storage devices, and wherein said one or more VLUNs are visualizations of said one or more PLUNS (column 2, lines 49-52, column 3, lines 32-36, 53-57, column 4, lines 7-19, column 6, lines 25-34).

As per claim 3, Watan discloses the storage server of claim 1, wherein said micro engine is a component of one of said plurality of storage processors (column 2, lines 23-27, 57-65, column 3, lines 58-64).

As per claim 4, Wantan discloses the storage server of claim 1, further comprising:

- A plurality of micro engines, wherein said plurality of micro engines are components of said plurality of storage processors (column 2, lines 23-27, 57-65, column 3, lines 58-64).

As per claim 5, Watan discloses the storage server of claim 1, wherein said plurality of data packets are received from one of said plurality of host computers (column 3, lines 63-67, column 5, lines 60-65, column 6, lines 14-18, 36-38).

As per claim 6, Watan discloses the storage server of claim 1, wherein said plurality of data packets are received from one of said plurality of storage devices (column 3, lines 63-67, column 5, lines 60-65, column 6, lines 14-18, 36-38).

As per claim 7, Watan discloses the storage server of claim 1, wherein said plurality of data packets are received from more than one of said plurality of storage devices (column 3, lines 63-67, column 5, lines 60-65, column 6, lines 14-18, 36-38).

As per claim 8, Watan discloses the storage server of claim 1, wherein said plurality of data packets are routed to one of said plurality of host computers (column 3, lines 63-67, column 4, lines 25-35, column 5, lines 63-67, column 6, lines 3-8).

As per claim 9, Watan discloses the storage server of claim 1, wherein said plurality of data packets are routed to one of said plurality of storage devices (column 3, lines 63-67, column 4, lines 25-35, column 5, lines 63-67, column 6, lines 3-8).

As per claim 10, Watan discloses the storage server of claim 1, wherein said plurality of data packets are routed to more than one of said plurality of storage devices (column 3, lines 63-67, column 4, lines 25-35, column 5, lines 63-67, column 6, lines 3-8).

As per claim 11, Watan discloses the storage server of claim 1, wherein said micro engine is further configured to execute processing comprising:

- Configuring a plurality of paths in accordance with said command packet (column 2, lines 23-27, column 4, lines 37-45).

As per claim 12, Watan discloses the storage server of claim 1, wherein said first storage processor receives said command packet from one of said plurality of host computers (column 4, lines 37-45, column 5, lines 28-40).

As per claim 13, Watan discloses the storage server of claim 1, wherein said first storage processor receives said command packet from one of said plurality of storage processors (column 4, lines 37-45, column 5, lines 28-40).

As per claim 15, Watan discloses the storage server of claim 1, wherein said first storage processor passes a handle to said second storage processor (column 5, lines 60-67, column 6, lines 1-10).

As per claim 16, Watan discloses the storage server of claim 1, wherein said first storage processor and said second storage processor are a single storage processor (column 5, lines 60-67, column 6, lines 1-10).

As per claim 17, discloses the storage server of claim 1, wherein said micro engine routes said data packet according to a routing tag therein (column 4, lines 20-30, 37-45).

As per claim 18, Watan discloses the storage server of claim 1, further comprising:

- A virtual server controller configured to program, via a configuration command, a lookup table in one of said plurality of storage processors, wherein said lookup table associates one or more virtual logical unit numbers (VLUNs) with one or more physical logical unit numbers (PLUNs) (column 2, lines 49-52, column 3, lines 32-36, 53-57, column 4, lines 7-19, column 6, lines 25-34).

As per claim 19, Watan discloses a method of routing data in a storage area network connecting a storage server between a plurality of host computers and a plurality of storage devices, said storage server having a plurality of storage processors and a

switching circuit, said plurality of storage processors receiving a plurality of command packets and a plurality of data packets, said method comprising:

- Configuring a path between a first storage processor and a second storage processor of said plurality of storage processors, via said switching circuit, in accordance with a command packet of said plurality of command packets (column 2, lines 23-27, 57-67, column 3, lines 32-35, column 4, lines 37-45);
- Routing a data packet of said plurality of data packets over said path, prior to completely receiving said data packet, between said first storage processor and said second storage processor via said switching circuit (column 5, lines 15-25, 29-50, 60-67, column 6, lines 1-10).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (hereinafter "Watan", US Patent No. 6,775,230 B1) in view of Karpoff et al. (hereinafter "Karpoff", US Patent Publication 2002/0112113 A1).

As per claim 14, Watan discloses the storage server of claim 1.

Watan does not explicitly discloses wherein said micro engine uses a command handle in said command packet to perform a tree search to configure said path.
However, in an analogous art, Karpoff discloses a mapping structure for medium sized disk images called a B-Tree structure.

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Karpoff's tree search in Watan's storage server in order to maintain data allowing translation of virtual block addresses to real block addresses.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent Publication 2002/0026558 A1

US Patent Publication 2003/0236945 A1

US Patent Publication 2002/0019958 A1

US 6,636,239 B1

US Patent Publication 2002/0073257 A1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (571) 272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barbara N Burgess
Examiner
Art Unit 2157

March 18, 2005

SALEH NAJJAR
PRIMARY EXAMINER